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A Guide to AIDS Research and Counseling

The Interface of HIV, Trauma, and Posttraumatic Stress Disorder

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There is growing awareness that many people with HIV have experienced trauma and may develop symptoms of posttraumatic stress disorder (PTSD). PTSD may occur after exposure to a traumatic event such as rape, physical assault, mugging or robbery, or life-threatening illness. Symptoms of the disorder include re-experiencing the trauma (for example, through intrusive memories or thoughts), avoidance, emotional numbing, and hyperarousal. PTSD is often accompanied by anxiety and depression, social alienation, and mistrust of family, friends, and systems.

This article reviews the data on the prevalence of trauma and PTSD among people with HIV. In addition, it discusses the potential impact of trauma exposure and PTSD on adherence, immune function, health behaviors and health outcomes. It also discusses effective treatments for PTSD and directions for future research.

Trauma Exposure and PTSD Prevalence

Studies clearly document high rates of trauma exposure among HIV-positive individuals. In one study of HIV-positive women, researchers found that 62 percent reported exposure to at least one traumatic event in their lifetimes,¹ which compares to 51 percent of women in the general population.² Their data further suggest that HIV-positive women are three to four times more likely than women in the general population to have been exposed to traumatic events involving interpersonal violence such as sexual or physical assault.

Investigators have also documented high rates of sexual trauma among HIV-positive men. One 2002 study found that 35 percent of gay or bisexual participants had a

history of sexual assault.³ By comparison, less than 1 percent of men in a general population survey reported a lifetime history of rape and approximately 3 percent reported a history of molestation.²

The same researchers also found rates of childhood sexual abuse that were significantly higher than the general population.⁴ Both HIV-positive men and women reported repeated traumatization, with men reporting an average of 10.0 sexual assaults during their lives, and women reporting an average of 7.5 sexual assaults.³

There may be a number of reasons for elevated rates of trauma exposure among individuals with HIV. One possible mechanism is the link between childhood sexual abuse and subsequent participation in high risk sexual and drug use behaviors that lead to HIV infection. Further, many HIV-positive individuals live in impoverished environments associated with high levels of trauma exposure.

While relatively few studies have assessed PTSD in people with HIV, some researchers have found prevalence rates for PTSD of approximately 35 percent among HIV-positive women¹ and gay or bisexual men,⁵ rates that are higher than those found in the general population (10.4 percent for women and 5.0 percent for men). A significant number of HIV-positive individuals may also have some symptoms of PTSD without meeting full criteria for the disorder.

A 1998 study also found that approximately 31 percent of a sample of HIV-positive men met criteria for PTSD following diagnosis with HIV,⁵ higher than rates for some other life-threatening medical illnesses. For many of the men in this study, HIV diagnosis was not their first exposure to trauma, and prior stressors may have increased their vulnerability to developing PTSD.

Several factors may contribute to high rates of PTSD among HIV-positive individuals. These factors include high rates of

Editorial: The Long Road to Safety

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I worked for many years as a social worker for people living with HIV. Often, when I told new acquaintances about my occupation, they would nod sympathetically and say, "That must be so hard. There's so much suffering."

Certainly, living with HIV took its toll on my clients, and I saw partnerships, extended families, and communities hit again and again by its devastation. But, I remember feeling slightly disconnected by this response. First, there was much that was enjoyable about my job. Second, I had witnessed the amazing transformation of HIV from a life-threatening illness for most into a more chronic, more manageable illness for many.

But something else that made me feel disconnected was harder to articulate: much of the suffering I witnessed did not seem to have an obvious connection to HIV. Once

my clients and I had gotten to know each other, clients would share their stories of the abusive, alcoholic mother or father, the extreme disciplinarian, the inappropriate uncle. I was struck by how often the same individual had experienced trauma over a lifetime—from childhood abuse to adult rape to domestic violence to street violence. Some of the challenges these clients faced as HIV-positive people were not new to them: shame and isolation and the sense that sex was dangerous were rooted as much in the past as in the present.

We don't understand exactly how a history of abuse or trauma is related to HIV risk, but as Deborah Brief, Melanie Vielhauer, and Terence Keane remind us in this issue of *FOCUS*, research has uncovered powerful links. Studies of HIV-positive women and gay and bisexual men match my experience in

the field, revealing high rates of trauma, often with an early onset, repeated over a lifetime. Their review offers several explanations of these links and charts the harmful effects of trauma on health outcomes. Nathan Hansen and Kathleen Sikkema delve into the incredible complexity of treating trauma, especially chronic trauma, and explore how current psychotherapies address its challenges.

Both articles remind us that one of the greatest ongoing harms of trauma is its potential to create problems in establishing trusting relationships: with doctors and mental health professionals as well as family, friends, and spouses or partners. Yet when survivors are able to risk connection, these relationships can be the source of understanding, and ultimately, healing. I remember being constantly amazed by the resilience of my clients, not only because they had survived histories that were hard even to hear, but also because they pointed their course toward safety and hope.

References

1. Kimerling R, Calhoun KS, Forehand R, et al. Traumatic stress in HIV-infected women. *AIDS Education and Prevention*. 1999; 11(4): 321-330.
2. Kessler RC, Sonnega A, Bromet E, et al. Post-traumatic stress disorder in the national comorbidity survey. *Archives of General Psychiatry*. 1995; 52(12): 1048-1060.
3. Kalichman SC, Sikkema KJ, DiFonzo K, et al. Emotional adjustment in survivors of sexual assault living with HIV-AIDS. *Journal of Traumatic Stress*. 2002; 15(4): 289-296.
4. Finkelhor D, Hotaling G, Lewis IA, et al. Sexual abuse in a national survey of adult men and women: Prevalence, characteristics and

exposure to the types of events that often lead to PTSD, such as sexual assault; high rates of early trauma and repeated traumatization; and living in high risk environments characterized by poverty, violence, and a lack of support.

PTSD and Substance Use Disorder

It is important to note that for many reasons, many HIV-positive trauma survivors have substance abuse, as well as posttraumatic stress, disorders. Both childhood sexual abuse⁶ and early-onset PTSD⁷ are associated with drug use behaviors that lead to HIV. In addition, having PTSD may increase the risk of developing a substance use disorder, possibly as an attempt to self-medicate trauma symptoms. Finally, substance use may increase the risk of exposure to traumatic events that are likely to lead to PTSD.

When PTSD and substance use disorders occur together, it is important to address both disorders in treatment, since substance abuse can mask the symptoms of PTSD and interfere with PTSD treatment. Providers seeking more information on

the complex combination of PTSD and substance abuse and its treatment should consult other sources.⁸

Trauma, PTSD, and Health Outcomes

A growing body of research suggests that trauma exposure and PTSD negatively influence physical health perceptions, physical complaints, and physical illness. Researchers have found that among HIV-positive individuals, those with a sexual assault history report a greater number of HIV-related symptoms than those without this history, even in the absence of differences on objective measures of illness.³ In addition, a 1999 study found that HIV-positive women with three or more victimization experiences had a higher number of AIDS-defining medical conditions than women with fewer victimization experiences, suggesting that cumulative trauma may contribute to subsequent physical illness.⁹ Further, in a 2002 study of HIV-positive individuals with persistent pain researchers found that people with PTSD reported significantly higher levels of pain intensity than those without PTSD, regardless of health status.¹⁰

risk factors. Child Abuse and Neglect. 1990; 14(1): 19-28.

5. Kelly B, Raphael B, Judd F, et al. Posttraumatic stress disorder in response to HIV infection. General Hospital Psychiatry. 1998; 20(6): 345-352.

6. Lodico MA, DiClemente RJ. The association between childhood sexual abuse and prevalence of HIV-related risk behaviors. Clinical Pediatrics. 1994; 33(8): 498-502.

7. Stiffman AR, Dore P, Earls F, et al. The influence of mental health problems on AIDS-related risk behaviors in young adults. Journal of Nervous and Mental Disease. 1992; 180(5): 314-320.

8. Brief DJ, Bollinger AR, Vielhauer MJ, et al. Understanding the interface of HIV, trauma, PTSD, and substance use and its implications for health outcomes. AIDS Care. 2004; 16(Suppl. 1): S97-S120.

9. Kimerling R, Armistead L, Forehand R. Victimization experiences and HIV infection in women: Associations with serostatus, psychological symptoms, and health status. Journal of Traumatic Stress. 1999; 12(1): 41-58.

10. Smith MY, Egert J, Winkel G, et al. The impact of PTSD on pain experience in persons with HIV/AIDS. Pain. 2002; 98(1-2): 9-17.

11. Cunningham RM, Stiffman A, Dore P, et al. The association of physical and sexual abuse with HIV risk behaviors in adolescence and young adulthood: Implications for public health. Child Abuse and Neglect. 1994; 18(3): 233-245.

12. Keane TM, Barlow-DH. Posttraumatic stress disorder. In Barlow DH, ed. Anxiety and Its Disorders, 2d ed. New York: Guilford Press, 2002.

Trauma and PTSD might influence these health outcomes through several pathways. First, individuals may misinterpret PTSD symptoms, especially those of hyperarousal, as evidence of physical illness. An example of this might be rapid heartbeat as a response to trauma-related stimuli. Second, negative emotional states may contribute to survivors' negative perceptions about their health. Third, trauma exposure may lead to increased participation in health-compromising behaviors and medication adherence difficulties. Finally, trauma may lead to changes in immune system capacity.

Health-Compromising Behaviors. Trauma exposure may lead to behaviors that compromise health. The literature suggests that women and men with a history of childhood sexual abuse are more likely than those without an abuse history to engage in unprotected sex, anonymous sex, sex with multiple partners, and sex work as well as injection drug use and needle sharing.⁶

In addition to childhood sexual abuse, childhood physical abuse or a combination of physical and sexual abuse in adolescence also increases subsequent participation in transmission-related behaviors in young adulthood.¹¹ Further, in one study HIV trauma survivors with a history of sexual assault were more likely than those without this history to engage in some high-risk sexual behaviors, for example, recent unprotected anal intercourse,³ which can lead to sexually transmitted disease or hepatitis co-infections, or superinfection with another, possibly more virulent, strain of HIV.

Medication Adherence. HIV-positive trauma survivors face unique challenges to medication adherence, including higher levels of emotional distress⁹ and depressive symptoms compared to HIV-positive individuals without this history.³ Further, PTSD is associated with difficulties in establishing trusting relationships and accessing social support.¹² It is clear that all of these factors can influence adherence to HIV antiviral medications, and providers whose work focuses on adherence may want to consult other sources for further information.⁸

Immune Function. Trauma exposure and psychological responses to trauma can compromise immune functioning. A 1999 study found that HIV-positive female trauma survivors showed a more rapid decline in CD4+/CD8+ cell ratios than women without trauma history, and declines were greater among those with current PTSD than those without PTSD.¹

Treatment Implications and Interventions

A number of empirically validated PTSD treatments have been found to decrease symptoms of PTSD and improve psychosocial functioning.¹² Several techniques are described briefly below. Since substance use disorders can interfere with the effectiveness of trauma-focused therapies, a familiarity with treatments for co-occurring PTSD and substance use disorders is also important. Again, clinicians working with clients who experience this combination should seek further information about treatment.⁸

Exposure therapy encourages clients to recall memories and confront feared reminders of the trauma they might otherwise avoid. This treatment involves *in vivo* and imaginal techniques used either separately or in combination.

During *in vivo* exposure, clients typically confront situations, places, or objects that are reminders of the trauma, which may involve returning to the trauma site (for example, the site of a rape). Imaginal exposure is often used when *in vivo* exposure is not possible (such as when trauma occurred in the distant past or at a distant location).

For example, a client might discuss his or her narrative of the event in detail with the therapist as if the event were happening in the present, or the therapist might present a traumatic scene based on information previously presented by the client. Once thoughts and feelings associated with the traumatic event are activated, clients can learn skills to better manage their feelings, examine their thoughts and possible distortions in thinking that can contribute to PTSD symptoms, and gain a better understanding of the meaning of the trauma.

Two other PTSD treatment approaches are worth mentioning. Anxiety management training, which uses a variety of behavioral and cognitive strategies (such as breathing retraining; relaxation, communication skills, and anger management training; and cognitive restructuring), increases a client's capacity to manage the emotions associated with PTSD. Cognitive therapy helps to identify and change the trauma-related distortions in thinking that help to maintain PTSD symptoms. Multidimensional treatment packages, which combine several of these approaches, have also received growing support. One example of this approach is cognitive processing therapy, which combines elements of exposure therapy, anxiety management training, and cognitive restructuring.¹³

13. Resick PA, Schnicke MK. Cognitive processing therapy for sexual assault victims. *Journal of Consulting and Clinical Psychology*. 1992; 60(5): 748-756.

14. Antoni MH. Cognitive-behavioral intervention for persons with HIV. In Spira JL, ed. *Group Therapy for Medically Ill Patients*. New York: Guilford Press, 1997.

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There has been little study of anxiety management training among people with HIV and PTSD. One study, however, observed the effects of anxiety management training on a group of gay men before and after HIV diagnosis, by its nature a potentially traumatic stressor. The study, conducted in 1991, enrolled gay men in a cognitive-behavioral stress management intervention or an assessment-only control condition.

The intervention condition included group support, education, relaxation, cognitive restructuring, and assertiveness training. The participants agreed that midway through the study (after about five weeks of treatment) they would be tested for HIV, and were notified of their status within 72 hours. Participants in the intervention group were more likely than those in the control group to use active coping strategies and to maintain social support after learning they were HIV-positive.¹⁴ These outcomes—active coping strategies and use of social support—are associated with better adherence.

The study also suggested that anxiety management training may help reduce the negative impact of trauma on immune functioning. Subjects who received cognitive behavioral stress management training prior to being informed of their HIV diagnosis showed a significant increase in CD4+ cell counts between pre- and post-notification, while men randomized to the assessment-only control condition showed no change. Moreover, post-notification immunologic values were positively associated with the frequency of self-reported daily home stress management practices.

Additional research is needed to determine whether cognitive behavioral stress training is as effective in HIV-positive individuals with exposure to other types of potentially traumatic events or in the presence of PTSD or whether these strategies will

be as effective when administered following rather than prior to the traumatic event.

Integrating Services for HIV and PTSD

There are several ways in which the health care system might improve integration of care for HIV, PTSD, and co-occurring substance use disorders. First, routine primary care screening for trauma exposure, PTSD and substance use disorders may help to identify individuals in need of specialized treatment. Second, familiarity with existing treatments for PTSD and integrated therapies for PTSD with substance use disorder will enable providers to assist patients in making decisions about treatment options.

Third, development of collaborative networks of medical providers and trauma specialists should improve access to care and referrals to specialized treatment. Fourth, primary care-based motivational interventions may encourage clients to follow through with more specialized treatment referrals. Finally, offering PTSD or integrated PTSD and substance abuse treatment in HIV primary care settings may help to engage patients in these treatment services.

Conclusions

Researchers have made excellent progress toward understanding trauma exposure and PTSD in the HIV population. However, additional research is needed to improve our knowledge of risk factors for PTSD and PTSD with substance abuse in this population. In addition, it will be important to identify the mechanisms through which trauma and PTSD exert their effect on HIV risk behaviors, disease progression, and other health outcomes. Finally, a critical focus for future research will be the evaluation of PTSD and substance abuse treatments for their efficacy in improving mental health, psychosocial, and health outcomes in people with HIV.

Clearinghouse: Trauma and HIV

References

Damsa C, Bandelier C, Maris S, et al. Recurrence of post-traumatic stress disorder and antiretrovirals. *Scandinavian Journal of Infectious Diseases*. 2005; 37(4): 313-316.

Delahanty DL, Bogart LM, Figler JL. Post-traumatic stress disorder symptoms, salivary cortisol, medication adherence, and CD4 levels in HIV-positive individuals.

AIDS Care. 2004; 16(2): 247-260.

Hilerio CM, Martinez J, Zorrilla CD, et al. Posttraumatic stress disorder symptoms and adherence among women living with HIV. *Ethnicity and Disease*. 2005; 15(4 Suppl. 5): S47-S50.

Kalichman SC, Gore-Felton C, Benotsch E, et al. Trauma symptoms, sexual behaviors, and substance abuse: Correlates of childhood sexual abuse and HIV risks among

men who have sex with men. *Journal of Child Sexual Abuse*. 2004; 13(1): 1-15.

Koopman C, Gore-Felton C, Azimi N, et al. Acute stress reactions to recent life events among women and men living with HIV/AIDS. *International Journal of Psychiatry in Medicine*. 2002; 32(4): 361-378.

Lewis CF. Post-traumatic stress disorder in HIV-positive incarcerated women. *Journal of the American Academy of Psychiatry and the Law*. 2005; 33(4): 455-464.